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ABSTRACT

An exploratory study of high-risk mothers' interactions with their infants studied modalities of stimulation; vestibular and auditory. It was hypothesized that stimulation would be lower for non-paranoid than for paranoid types, and than for control mothers. Mothers recruited from inner city gynecological clinics were screened for probable schizophrenia by the Schachter Scale. They were then judged clinically as to Paranoid Personality Disorder (Paranoids), other Schizoid Personality Disorder (Non-Paranoid) and low psychopathology (Controls). These clinical diagnoses were then verified by three Rorschach indicators, which significantly differentiated the groups. Three groups of five control, two non-paranoid, and two paranoid subjects, repsectively were compared as to their stimulation of their infants at 4, 5, and 6 weeks of age. Findings indicate that Paranoid Personality disordered mothers stimulate their infants more than Non-Paranoids and more than Controls. The expectation that Non-Paranoids would stimulate infants less than Controls is not supported by the data; however, this result appeared to be due to the effect of one extremely anxious, restless mother. Differences between groups were highlighted when mothers were alone with their infants. (Author/CL)

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EXPLORATIONS IN HIGH-RISK STIMULATION: Two Modalities in Mothering

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Running Head: High-Risk Stimulation

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Abstract

This is an exploratory study of high-risk mothers' interactions with their infants. Two modalities of stimulation were studied: vestibular and auditory. It was hypothesized that stimulation would be lower for non-paranoid than for paranoid types, and than for control mothers. Mothers recruited from inner city gynecological clinics were screened for probable schizophrenia by the Schachter Scale. They were then judged clinically (DSM 111, Axis 11) as to Paranoid Personality Disorder (Paranoids), other Schizoid Personality Disorder (Non-Paranoid) and low psychopathology (Controls). These clinical diagnoses were then verified by three Rorschach indicators, which significantly differentiated the groups. Three groups of five control, two non-paranoid, and two paranoid subjects, respectively were compared as to their stimulation of their infants at 4, 5, and 6 weeks of age. Findings indicate that Paranoid Personality disordered mothers stimulate their infants more than Non-Paranoids and more than Controls. The expectation that Non-Paranoids would stimulate infants less than Controls is not supported by the data; however, this appears due to the effect of one extremely, anxious, restless mother. Differences between groups are highlighted when mothers are alone with their infants. Implications for interventions are included.

High-Risk Stimulation: Two Modalities in Mothering

With the policy of deinstitutionalization, the issues concerning mothering styles and their consequences have increased in importance. Both human and animal studies point to the critical importance of neonates' experiences during the first months of life for both physical and psychological development. An infant who is deprived of early stimulation is at risk for delayed cognitive and emotional development[2,3,16]. We know of the importance of vestibular stimulation from both the pathology literature on infantile autism and childhood schizophrenia,[1,7,10,15] as well as from naturalistic observation of the stimulating and soothing effects of vestibular stimulation on the infant. There are large individual differences in the patterns of maternal care, which include vestibular stimulation and also auditory stimulation. Paucity of verbal exchange between care givers and infants can result in retardation in language facilities in infants and children[8,11,17]. Laboratory studies and clinical observations have pointed to the significant contribution of mother's talking in fostering infant vocalization[6].

Research evidence suggests that schizophrenic women often vocalize and provide vestibular stimulation less than normal mothers do with their infants[5,7,14]. Furthermore, offspring of psychotic women, and particularly schizophrenic women have a significantly higher probability of developing various psychological and developmental abnormalities, manifesting a broad range of psychopathology[4,12].

These two important areas of stimulation are investigated in the present study. The first question pertains to levels of stimulation mothers offer their infants. Do disturbed mothers in particular, schizophrenic mothers, differ from non-disturbed mothers in the levels of stimulation of their infants?

A gross distinction which has been observed clinically amongst schizophrenics is between paranoid types and other types of schizophrenics. The paranoid schizophrenics tend to maintain their level of integration and functioning in contrast to others who tend to be less stable, often deteriorating. The authors extrapolated that these differences would manifest themselves in behavior vis-a-vis infants. The task is to explore how those mothers differ from the control group in a lower socio-economic, inner city population.

The following hypotheses were consequently explored in the present study.

Hypotheses: In the realms of vestibular and auditory stimulation:

1. Non-paranoid mothers will stimulate their infants less than control mothers.
2. Paranoid mothers will stimulate their infants more than Non-paranoid mothers.

Method:

Subjects. Subjects were recruited from the gynecological clinics of the Maternal and Child Health Clinics of the city. All subjects were inner city blacks; low socio-economic level; predominantly unmarried, most fathers continuing in the relationship in a non-supportive fashion, which excluded them in a significant way from having a positive influence on the life of the infant. They did not provide the necessary support to the mothering process, at times being detrimental to the mother-infant relationship. All mothers were screened during the last trimester of pregnancy by the Schachter[13] scale.

All the subjects were functioning in a non-psychotic level in their communities and adapting with variable degrees to reality. Yet some subjects' test results of both the Schachter Scale and the Rorschach inkblot test indicated an underlying schizophrenic process. These were classified as DSM 111,

Axis 11-301.20, schizoid personality disorder, and DSM 111, Axis 11-301.00, paranoid personality disorder. Those subjects with low psychopathology constituted the control group. These groups are subsequently referred to as: Schizoid (S), Paranoid (P), Non-paranoid (N), and Control (C).

Procedure. The study was explained to the subjects and they were invited to visit the Studies Center[1] prior to parturition in order to acquaint themselves with the location, surroundings and staff, as well as to receive a more complete explanation of the procedures of the study. Of those invited to participate, 90% agreed to do so; 94% of the group completed the observation sessions.

Subjects returned for their first session at infant's age of one month and then for two more consecutive weeks, for a total of three observation sessions. At age 2 months[2] the mother was given the Rorschach Inkblot Test.

All observation sessions were video-taped.

Scoring of video-tapes: Sessions were scored as to presence or absence of vestibular and auditory stimulation during each alternate five seconds of the tape. The score for a session equals the total number of positively scored five second intervals, divided by the total number of these intervals constituting the observation period. The Pearson r was used as a check for inter-rater reliability; on a sample of tapes, r ranged between .92 and .97. This is considered a highly acceptable level of reliability.

Results

The screening score was used for initial groupings. Five were placed into the control group and five into the schizoid group. The placements were verified through clinical diagnosis on psychological testing; and the schizoid group was subdivided into a paranoid group, of two subjects, and a non-paranoid

group, of two subjects, on the basis of presence or absence of paranoid tendencies. One subject was dropped due to lack of clear indicators of a schizoid type of personality structure.

In order to further clarify the difference between these groups, response counts were made in each Rorschach record of three types of indicators of psychopathology: anxiety responses, destructive responses, and responses having poor form. For these analyses six additional control subjects were used (Control group, n=11). Table 1 presents the mean responses for each type by subject group, the sum of these means for each group, and significance of difference by application of the Mann-Whitney U test.

Insert Table 1 about here

Schizoid subjects have significantly more anxiety, destructive, and poor form responses than controls. Similarly non-paranoids and paranoids have significantly more anxiety and destructive responses than controls, and paranoids have more poor form responses.

When differences between groups are examined for the sum of their means of Rorschach indicators of psychopathology, each group has significantly more psychopathological responses than the controls; and the two types of schizoids are significantly different from each other.

The subjects are therefore considered to fall into the three groups: controls, non-paranoids and paranoids.

Vestibular and Auditory Stimulation

Comparisons were made of the amounts mothers stimulated their infants in the two areas of inquiry: vestibular and auditory.

Vestibular Stimulation. Mothers' vestibular stimulation of their infants during the total observation period, in the presence and absence of the experimenter, were summed for the three observation sessions (Table 2).

Insert Table 2 about here

There is a tendency (approaching significance) for paranoid mothers to stimulate their infants vestibularly more than controls, over total observation periods, as well as in dyad alone periods.

Furthermore, paranoids tend to stimulate their infants more than non-paranoids, when alone with their infants.

Though non-paranoids do not differ significantly from controls, for vestibular stimulation, in both comparisons the non-paranoid group does stimulate less than the control group.

Auditory Stimulation. Mothers' auditory stimulation of their infants in the presence and absence of the experimenter, were summed for the three observation sessions for three conditions. These are:

1. Mother's vocalizations to her infant over the total session, in the presence and absence of the experimenter;
2. When alone with her baby (dyad alone); and
3. Mothers total vocalizations during the entire session both to the experimenter and to her infant. These mean sums are shown in Table 3.

Insert Table 3 about here)

Paranoids offer significantly more auditory stimulation to their infants than do controls and tend to do so more than non-paranoids over total sessions, and in the dyad alone situation.

When the experimenter was in the room with the dyad, the mother also talked with the experimenter. This vocalization added to vocalizations made to the infant indicates the same tendency for paranoids to vocalize more than either the non-paranoids or the controls. Though non-paranoids do not differ significantly from controls, in two of the three comparisons for auditory stimulation, the non-paranoid group does stimulate less than the control group.

It may be noted (Tables 2 and 3) that differences between groups tend to be far greater in the dyad alone situation than for the total session.

Discussion

The pattern is that non-paranoids tend to offer less auditory stimulation to their babies than paranoids and that paranoids stimulate significantly more than controls. The paranoids might be thought of as super-stimulators; the non-paranoids as under-stimulators. This is more clearly evident in the area of auditory than vestibular stimulation. It is as, or more, pronounced during the dyad alone segment than over the entire observation session.

The mother's intention to stimulate was not evaluated. It was frequently the case that vestibular stimulation was scored when this stimulation was a product of the mother's movements, which were unrelated to any intention on her part to move the infant. One of the non-paranoid mothers evidenced nervous or restless types of movements (which resulted in vestibular stimulation.) Her scores on vestibular stimulation would be found to be inflated if intentionality were taken into account. Her extreme anxiety and constant restlessness elevated her scores and this consequently distorted the outcome

for the non-paranoid group, which would otherwise have been far below that of the control group. (It was subsequently learned, in interviews with the mother, that in the home situation the infant received only minimal stimulation, being left in bed essentially all day).

Differences between groups tend to be more pronounced for the dyad alone than over the entire session. The mothers' behavioral tendencies would appear to have freer reign when alone with the infant, without the experimenter present in the room.

Conclusions:

1. The hypothesis that non-paranoids tend to stimulate their infants less than control mothers does not receive adequate support (see discussion);
2. Paranoids tend to stimulate their infants more than non-paranoid mothers;
3. In addition, it is found that paranoids super-stimulate their infants (more stimulation than controls);
4. Differences in stimulation between groups tends to be more pronounced when the mother and infant are alone (dyad alone) than with the experimenter present.

The importance of the distinction between non-paranoids and paranoids is highlighted. This is particularly the case in terms of understanding potential differences in development of their children, as well as planning of any interventions for mothers. Those mothers who are non-paranoid and are under-stimulators, would tend to require interventions which include an attempt to increase their stimulations of their infants. Paranoids, on the other hand, need to have other types of interventions, depending upon the

specifics. If the super-stimulation of a mother has noxious characteristics, interventions might even be indicated to reduce stimulation. Approaches of intervention will be presented in a future article.

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Footnotes

[1]The Studies Center is a cottage on the grounds of the Hospital, separate from the Patient Areas. It is furnished in a comfortable, home-like atmosphere.

[2]Follow-ups will be done at six months and at one year.

Table 1

Means of Three Rorschach Indicators of Psychopathology: 1 - Anxiety Responses, 2 - Destructive Responses, 3 - Poor Form Responses; Sum of These Means; and Mann-Whitney[a] U Comparison of Groups.

Means				
Group	M_1	M_2	M_3	$\Sigma(M_1+M_2+M_3)$
Control (C)	.09	.36	2.09	2.55
Schizoid (S)	2.25	2.75	5.25	10.25
Non-Paranoid (N)	1.50	3.00	1.50	6.00
Paranoid (P)	3.00	2.50	9.00	14.50
Mann-Whitney U				
Between Groups	U_1	U_2	U_3	U
CS	1*	4*	8*	0*
CN	1*	1*	8	1*
CP	1*	0*	0*	0*
NP	1	2	0†	0†

[a]For the cases of $n_1=2$, $n_2=2$ Fisher's Method of Randomization was used; $p < .167$ is lowest level of probability possible.

†$p < .167$

*$p < .05$

Table 2

Mean Sum of Vestibular Stimulation Over Observation Session 1, 2 & 3, and Mann-Whitney[a] U Comparison of Groups.

Group	Mean Sum	Between Groups	U
	Total Session		
Control (C)	158.8	CN	4
Non-Paranoid (N)	154.5	CP	1††
Paranoid (P)	196.0	NP	1
	Dyad Alone		
Control	155.6	CN	5
Non-Paranoid	147.5	CP	1††
Paranoid	207.5	NP	0†

[a]For the cases of $n_1=2$, $n_2=2$ Fisher's Method of Randomization was used.

†$p < .167$

††$p < .10$

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Table 3

Mean Sum of Auditory Stimulation Over Observation Sessions 1, 2, & 3, and Mann-Whitney[a] U Comparison of Groups.

Group	Mean Sum	Between Groups	U
	To Infant Total Session		
Control	41.6	CN	6
Non-Paranoid	40.5	CP	0*
Paranoid	102.0	NP	0†
	To Infant Dyad Alone		
Control	62.4	CN	5
Non-Paranoid	63.0	CP	0*
Paranoid	172.0	NP	0†
	Total Session Total Vocalizations to Infant and to Experimenter		
Control	187.0	CN	4
Non-Paranoid	151.5	CP	1††
Paranoid	238.0	NP	0†

[a]For the cases of $n_1=2$, $n_2=2$ Fisher's Method of Randomization was used.

†$p < .167$

††$p < .10$

*$p < .05$

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